

PRESS RELEASE

Electric enduro from KTM powers ahead with HEINZMANN disc motors

Maximum off-road fun

Brushless synchronous disc motors from the HEINZMANN PMS series give a whole new meaning to the name of the new Freeride E enduros from KTM. They deliver maximum off-road ride fun - without all the noise and exhaust.

With its new Freeride segment KTM, the world's market leader for off-road motorbikes, injects fresh potential into the off-road sport. „These featherweight connoisseur enduros share the same basic genes as all KTM sports enduros“, explains Johannes Proschek, product manager for electric mobility at KTM and the person who is driving the development of the Freeride e, which runs in parallel to the Freeride 350. The extremely lightweight Freeride enduro machines meet off-road challenges playfully and with minimum energy. The electric version is a vehicle which is comparable with a 125 ccm two-stroke machine. The immediate full torque of the electric engine and no gear changing heighten the fun factor however on narrow, twisting courses with challenging corners. And the fact that all you can hear from the motorcycle itself is the chain action is a whole new experience. ‚Freeride‘ however also means riding with no noise and no fumes on motocross tracks near residential areas. This makes it easier to set up training facilities and this will benefit the off-road sport.

Zero emissions

The PMS motor series features the technology developed and patented by PERM. HEINZMANN has completed the integration of Perm Motor GmbH in 2012.

KTM is the first leading motorcycle manufacturer to adopt this brushless disc motor from the HEINZMANN PMS series and it puts the company way ahead of the field.

The Mattighof motorcycle manufacture has integrated the active parts of the motor into its own carrier casing. Its design makes this motor predestined for the bike segment. „The PMS 126 features particularly slim lines and a high power density“, acknowledges Proschek. Its low inertia is also especially important and offers extremely good acceleration characteristics. A good range is also particularly important in electric mobility and this is achieved by HEINZMANN's highly efficient patented PERM technology.

The synchronous motor with, in this case, up to 6000 rpm, develops a maximum torque of 42 Newton meters.

This ensures a thrill for riders from the first tug on the twist grip. Power increases in line with the performance



Figure 1: With up to 30 HP and 42 Newton meters from the HEINZMANN disc motor the Freeride E is equivalent to a 125.



Figure 2: The new Freeride E goes into production with a run of a few hundred in 2012.

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demanded from the twist grip, which riders always want from combustion engines but seldom get. KTM has created a high-voltage 300 volt power supply concept and has developed a dedicated lithium ion battery especially for it. The battery is fully charged in around one and a half hours giving around three quarters of an hour enduro riding depending on terrain and riding style. It takes no time at all and just a single hand movement to swap to a fresh battery pack for the Freeride E. Then it is back to maximum off-road fun, dishing out the toughest treatment and enjoying zero emissions.

Company Profile

HEINZMANN is a renowned manufacturer of electric drives up to about 30 kW.

Since January 2012, the portfolio of Perm Motor GmbH, manufacturer of electric motors with patented rotor technology, has been completely integrated into HEINZMANN's division of Electric Drives.

The product range comprises:

- Brushless disc-type motors
- Permanently excited synchronous motors available as
 - Disc motors (patented)
 - External rotor motors
 - Wheel hub motors
 - Generators
 - Integrated motors - generators

The electric drive systems are used in a wide range of applications.

- Industrial applications (e.g. fans, pumps, robotics, mobile work machines, agricultural machinery)
- Mobility (e.g. light electric vehicles, electric hybrid applications, motorbikes, boats)
- Energy (e.g. small windmill-power plants, block heating plants)

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Figure 3a+b: The design, power density and efficiency of the PMS engine series from HEINZMANN match KTM's Freeride enduro concept.